

CLAIMS

What is claimed is:

1. A broadcast network comprising:
 - 5 a) an optical transmitter for broadcasting a single optical signal to a plurality of end users at different locations;
 - b) an optical fiber cable that includes a plurality of individual fibers; wherein the number N of individual fibers corresponds to the number of end users; and
 - 10 c) a branch point where the individual fibers branch out to the individual users.
2. The broadcast network of claim 1 wherein the network is arranged as a logical star.
- 15 3. The broadcast network of claim 1 wherein the network is arranged as a physical bus.
4. The broadcast network of claim 1 wherein the branch point includes a tree of 1×2 splitters.
- 20 5. The broadcast network of claim 1 wherein the branch point includes a $1 \times N$ splitter that includes an input.
- 25 6. The broadcast network of claim 5 wherein the $1 \times N$ splitter is implemented with one of a free space star coupler, an optical fiber splitter, and a planar waveguide splitter.

7. The broadcast network of claim 5 wherein the branch point further includes an optical booster amplifier that includes an output coupled to the input of the 1 x N splitter.

5 8. The broadcast network of claim 1 further comprising:
a central office;
wherein the branch point is located in the central office.

9. The broadcast network of claim 1 wherein the branch point is
10 located in the field.

10. The broadcast network of claim 1 further including:
a second fiber optic cable for use in implementing route diversity.

15 11. The broadcast network of claim 1 further including:
d) at least one optical receiver for receiving one of the individual
fibers.

12. The broadcast network of claim 1 further including:
20 d) a plurality of optical receivers; wherein each receiver is
coupled to a respective individual fiber.

13. The broadcast network of claim 1 wherein the optical transmitter
includes:
25 an optical source for providing an optical signal;

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an optical modulator for receiving data signals, for receiving the optical signal, and for modulating the optical signal based on the data signals to generate a modulated optical signal.

5 14. The broadcast network of claim 13 wherein the optical transmitter further includes:

a multiplexer for receiving a plurality of data signals and based thereon for generated a multiplexed signal;

10 wherein the multiplexed signal is provided to the optical modulator.

15 15. The broadcast network of claim 11 wherein the optical receiver includes:

a photodetector for receiving a modulated optical signal that includes data signals, for demodulating the modulated optical signal to recover the data signals.

16. The broadcast network of claim 15 wherein the optical receiver further includes:

20 a de-multiplexer for receiving a recovered multiplexed data signal and based thereon for generating the individual data signals.

17. The broadcast network of claim 1 wherein the optical transmitter transmits the signal on all the individual fibers.

18. A method for broadcasting information through a broadcast network using a multi-optical-fiber cable that includes a plurality of individual optical fibers, the method comprising:

receiving a broadcast signal;

5 transmitting the broadcast signal through the multi-optical-fiber cable; and

delivering the broadcast signal to a respective user through a dedicated individual optical fiber.

10 19. The method of claim 18 further comprises the steps of:
using an optical receiver to receive the signal.

20. The method of claim 18 further comprises the steps of:
transmitting the same signal on all the individual fibers of the
15 cable.

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